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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

William D. Ramsden, et al.

ASCORBIC ACID COMPOUNDS AS
REDUCING AGENTS FOR
THERMALLY DEVELOPABLE
COMPOSITIONS AND IMAGING
MATERIALS

Serial No. 10/764,704

Filed 26 January 2004

Commissioner for Patents
P.O. Box 1450
Alexandria, VA. 22313-1450

Sir:

Group Art Unit: 1752

Examiner: WALKE, Amanda C.

I hereby certify that this correspondence is being deposited today with the United States Postal Service as first class mail in an envelope addressed to Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Sherry A. Payne
Sherry A. Payne
August 23, 2005
Date

DECLARATION UNDER 37 C.F.R. 1.132

I, James B. Philip, Jr. declare that:

(1) I am a co-inventor of the invention described and claimed in the present application, along with William D. Ramsden, Doreen C. Lynch, and Paul G. Skoug.

(2) I received a Ph.D. degree in physical organic chemistry from the University of Rochester in 1980. In the course of my graduate studies, I was the co-author of 3 publications that were published during 1978-1981.

(3) From November 1980 to July 1996, I was employed by 3M Company; from July 1996 to March 2002, I was employed by Imation Corporation; and from April 2002 to the present, I have been employed by Eastman Kodak Company, all in facilities located near St. Paul, Minnesota.

(4) During my employment with 3M Company, Imation Corporation, and Eastman Kodak Company, I have been involved in research and

development work in the area of imaging science and materials, and particularly in research and development of photothermographic materials and products. In the course of that work, I have been an inventor or co-inventor of at least 25 inventions, all of which are the subject of granted U.S. patents, pending U.S. patent applications, or published patent applications in other countries. In addition, I am the author or co-author of 1 scientific publication in photothermography.

(5) In view of this considerable academic and professional technical experience, I can say, with appropriate modesty, that I am a worker having at least ordinary skill in the art to which the present invention pertains, namely thermally developable compositions, photothermographic materials, and components thereof including reducing agents.

(6) I am familiar with the Office Action dated June 2, 2005 that has been received during the prosecution of the present application, and the art cited therein, and I believe that I understand the Examiner's arguments in support of her rejection of the presently claimed invention. In particular, I have read and am familiar with the teaching in U.S. Patent 3,827,889 (hereinafter, "Ohkubo et al.") that corresponds to FR Patent publication 1,542,505 ("Masuta") that was cited in the recent Office Action.

(7) The Ohkubo et al. reference (both US and FR counterparts) describe thermally developable light sensitive compositions that include silver halide, a reducing agent, and an aliphatic monocarboxylic acid. The reference teaches that esters of 1-ascorbic acid can be added for alleged benefits. Such esters include 1-ascorbyl palmitate, 1-ascorbyl laurate, and 1-ascorbyl myristate that are described in TABLE I (Examples 1-7).

(8) To me as one of at least ordinary skill in the art, an obvious ascorbic acid ester to try in photothermographic materials to find optimal sensitometric properties and to improve post-processing light stability, is 1-ascorbyl palmitate (L-ascorbic acid-6-palmitate). This compound is relatively inexpensive and commercially available from Aldrich Chemical Company (Milwaukee, WI).

(9) However, when I tried to prepare Solution D (described in TABLE II of Example 1 of the present application), for use in an aqueous-based phothermographic formulation, 1-ascorbyl palmitate would not dissolve. Subsequent heating at 55°C with concurrent use of sonic energy for one half hour also failed to dissolve the 1-ascorbyl palmitate. In contrast, when the same premix was prepared using a molar equivalent amount of 1-ascorbyl pivalate (Compound I-1 of the invention), complete dissolution occurred at 55°C with sonic energy.

I also tried to dissolve 1-ascorbyl palmitate in a solution containing 50% methanol and 50% water as described in Example 2 of present application. 1-Ascorbyl palmitate would not dissolve even when the mixture was heated at 40°C. In contrast 1-ascorbyl pivalate readily dissolved in such a mixture.

Thus, I found 1-ascorbyl palmitate was impossible to use as a reducing agent in the compositions and materials of the presently claimed invention.

(10) We have unexpectedly found that the esters defined by Structure (I) in our Claim 1 did not have the problem exhibited by 1-ascorbyl palmitate. This is unpredictable from the mere differences in chemical structure, i.e. the difference in the length of chain represented by R₁ and R₂ in our Structure (I). In my opinion, the presently claimed invention is therefore unobvious over the teaching in Ohkuba et al. alone or when combined with the two Simpson et al. patents and Taguchi reference that were also cited in the Office Action.

(11) That all statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true. These statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: 8-19-2005

James B. Philip Jr.
James B. Philip, Jr.